Appendix 12

Lighting

Proposal

As part of the EIA an assessment has been undertaken of the effects of the potential night time light obtrusion from the project in view of the site being in a rural location away from built up areas and where there is little existing night time lighting. The assessment has used national policy and light obtrusion guidance including the Institute of Lighting Professionals (ILP) Guidance Note for the Reduction of Obtrusive Light.

The assessment identifies the consequences of light obtrusion are associated with loss of dark night skies, loss of visibility of stars, perception of an unsatisfactory nocturnal environment and harming of wildlife habitats. Light obtrusion could also have detrimental effects on human health and present physiological and ecological problems. It may also constitute unnecessary energy waste.

Baseline nocturnal lighting measurements were taken at selected viewpoints identified as part of the landscape and visual impact assessment to provide a nocturnal baseline study around the site and which were used as a basis for the light assessment in November 2013 between 19.00 and 01.30 hours. The measurements identified sky glow above Preston, Blackpool and Lytham St Annes and aviation lighting at varying heights on the nearby radio transmitters at Inskip and which are clearly visible over long distances. The nearest receptors to the site would be the villages of Wharles and Roseacre.

The construction of the well pad, access track and gas pipeline would take place during normal daytime hours but there may be temporary lighting required in the event works continue when natural light has diminished during normal working hours and which may be seen from local properties depending on the time of the year and topography and if required is likely to cause some minor adverse effect due to it's design for temporary usage. Security lighting would comprise low power over-door bulkhead luminaries using low energy light sources which are unlikely to exceed ILP guidance.

The project proposes 24 hour drilling and fracturing operations involving the need for lighting of working areas during hours of darkness. This would include the need for elevated parts of the drilling rig to be illuminated to ensure safe working practices. Site and security lighting would also be required. Whilst not confirmed it is likely that the lighting for the site would comprise four mobile lighting towers with four 400W floodlights each; for the drilling rig, nine 500W floodlights and fourteen 2x35W luminaires mounted at varying heights; and tank lighting two 2x 18W luminaires.

The assessment sates that the light into windows and light source intensity can be designed to be compliant with ILP guidance. The luminance of the rig would be generally below the limit for the taller sections of the rig, where the rig would be most visible from a distance, although the low level luminance on the site cabins would exceed the limit for obtrusive light. Given the drilling of the wells would last initially 5 months, then for up to three months albeit with intervals, although the lighting would

be temporary it would be greater than a week and would have a significant effect without mitigation.

A similar impact to that associated with site development can be expected from fracturing activities, initial flow testing, the installation and operation of extended flow testing equipment, namely not a significant effect.

The assessment is that the Roseacre Wood and Preston New Road sites are sufficiently distant from each other that there would not be a combined or cumulative lighting impact on receptors from both sites.

The assessment concludes that due to the combination of few sources of night time lighting in the vicinity of the site, the use of lighting during the project without mitigation would result in a significant effect for drilling and fracturing and a not significant effect for site construction, initial flow testing and extended flow testing.

It also concludes that avoidance of light pollution beyond the site boundary would minimise any significant residual effect on local wildlife habits or residents and would result ion a negligible or minor effect meaning the residual effects would not be significant.

It is proposed to mitigate potential effects during the construction, initial and extended flow periods by employing best practice, confining lighting to the task area, orientating lights and operating a curfew.

With regard to drilling and fracturing, lighting will be employed in accordance with ILP guidance using the lowest powered light sources possible; direct lighting to tasks avoiding wide area lighting; target light using precision optics; shield plant lighting from view from the nearest properties and sensitive habitats; employ low key security lighting with movement sensor controls or part light diming; maximise the shielding effect of site cabins; minimise the height of lighting columns (6m); employ a curfew and monitor the site and respond to complaints promptly.

It is considered that by implementing such measures the lighting could be kept below lighting limits for light into windows and overall light intensity to the extent that residual effects would not be significant. The mitigation measures would reduce the magnitude of the developments impact on sky glow and building luminance levels from the equipment at the site and the surface of the well pad. However, it is recognised that because of the low levels of night time light sources around the site, the lighting effects would remain significant and mitigation would be necessary.

Summary of Consultee comments and Representations

LCC Lighting: No objection to the proposals and has advised that the lighting design generally complies with the required standards, with the exception of predicted sky glow, which marginally exceeds permitted standards.
He does not anticipate any issues to surrounding area, highway or users.

LCC Director of Public Health: recommends that an assessment of light pollution as part of the site operations should be carried out, and if there are likely to be significant impacts

associated with light pollution from the sites that cannot be mitigated or controlled, the Applicant should be requested to consider the opportunity to offer to fit blackout blinds to those homes most likely to be affected.

Roseacre Awareness Group: Object for a number of reasons including the following summarised reason in respect of lighting:

- The light pollution will transform an idyllic countryside area into an industrial zone with loss of social amenity. Detrimental to tourism and property prices.

Objections have been received against light pollution and in particular relating to:

- Contrary to Policy EP28 as it will not minimise harm relating to loss of local character, amenity or reduction in highway safety.
- Impact of light pollution and disturbance from floodlighting every night, 7 days a week, 365 days a year. Blight to the countryside.
- Little light pollution now so development will significantly affect local residents.
- The site will look like a football pitch with floodlighting in contrast to the beautiful rolling countryside.
- Visual impact of gas flaring and site lighting, in the setting of a rural locality, the light pollution will be greater than any agricultural development and will have an adverse effect on the community and tourism.
- Floodlights will ruin the night sky. The sky glow level is too high so nightime operation should not be permitted.
- Will be visible from Roseacre and Inskip. Not acceptable.
- Concern regarding impact of lighting on road safety with regard to threshold increment (loss of visibility) and veiling luminance (disability glare).
- Detrimental impact on wildlife including resident bird population.

The Director of Public Health recommends that an assessment of light pollution as part of the site operations should be carried out, and if there are likely to be significant impacts associated with light pollution from the sites that cannot be mitigated or controlled, the Applicant should be requested to consider the opportunity to offer to fit blackout blinds to those homes most likely to be affected.

Policy

Section 11 of the NPPF relates to conserving and enhancing the natural environment. Paragraph 125 encourages good design, planning policies and decisions to limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

Policy DM2 of the LMWLP supports proposals for minerals operations where it can be demonstrated that all material social, economic or environmental impacts that would cause demonstrable harm can be eliminated or reduced to acceptable levels.

Policy EP28 of the Fylde Borough Local Plan relates to Light Pollution. In relation to proposals involving external lighting, light pollution must be addressed and provision made to avoid or minimise harm relating to loss of local character, loss of amenity or

reduction in highway safety. The policy requires lighting schemes to be well designed and the light intensity not excessive in relation to its function and that light sources must be directed at the object to be illuminated to minimise extraneous emissions.

Assessment of Impacts

The applicant's assessment concludes that because of the low levels of night time light sources around the site, the lighting effects would be significant and mitigation would be necessary. There is no doubt that the site falls within a very rural area with minimum light pollution, the main pollution being distant night glow from the urban areas of Lytham, Blackpool and Preston. There are phases of the development that would not generate light pollution, namely site construction, initial flow testing and extended flow testing. However, operations involving drilling and hydraulic fracturing would create light pollution because of their extended nature of greater than one week. There would be more light at a higher elevation associated with the drilling operations in view of the need for operational safety. Whilst this would be temporary it would be over an extended period of initially five months for the first bore hole and three months for each subsequent borehole. Similar lighting would be required throughout the fracturing operations thereby generating light over a continuous minimum period of 19 months. This would result in some sky glow and building luminance that could be significant.

The flare would be enclosed and therefore there would be no light pollution associated with such.

The County Council's lighting advisor has raised no objection to the proposals and has advised that the lighting design generally complies with the required standards, with the exception of predicted sky glow, which marginally exceeds permitted standards. He does not anticipate any issues to surrounding area, highway or users.

The Director of Public Health has recommended that an assessment of light pollution as part of the site operations should be carried out, and if there are likely to be significant impacts associated with light pollution from the sites that cannot be mitigated or controlled, the applicant should be requested to consider the opportunity to offer to fit blackout blinds to those homes most likely to be affected.

Lighting has properly been assessed; it concludes there would be some light pollution at night. Notwithstanding it would be for an extended period of time, with the mitigation measures proposed, and which could be controlled by condition, on balance, it is considered that lighting could be made acceptable and that the impacts associated with such would not be so great to affect amenity on a permanent basis or lead to unacceptable effects on nature conservation to constitute a sustainable reason for refusal. It would not be appropriate to require blackout blinds to be fit to those properties most likely to be affected.

Conclusion

Subject to the mitigation measures proposed, and which could be controlled by condition, it is considered on balance that the proposed lighting for a temporary period would be acceptable for the purposes of the NPPF Policy DM2 of the LMWLP and Policy EP28 of the Fylde Local Plan.